



# CHEMISTRY

## BOOKS - ICSE

### ICSE EXAMINATION PAPER 2020

#### Section I

1. The correct formula of aluminium oxide is



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2. In the periodic table, the vertical columns are called \_\_\_\_\_ (periods/groups)



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3. Group II metals are called \_\_\_\_\_ metals.  
(alkali/alkaline earth).



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4. Properties of the elements are a periodic function of their \_\_\_\_\_. (atomic number/mass number/relative atomic mass)



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5. A carbonate that does not decompose on heating is \_\_\_\_\_ ( $K_2CO_3 / CaCO_3$ )



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6. Which of the following is a covalent compound?

- A. Sodium chloride
- B. Carbon tetrachloride
- C. Magnesium chloride
- D. Calcium chloride

**Answer:**



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7. The salt that undergoes photo chemical decomposition is:

A. Copper sulphate

B. Zinc carbonate

C. lead bromide

D. Silver nitrate

**Answer:**



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8. With the rise in temperature the solubility of sodium chloride in water :

A. Decreases

B. Increases and then decreases

C. Increases sharply

D. Increases only a little

**Answer:**



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9. Which metal gives hydrogen on reacting with water, acid and alkali?

Iron

Zinc

Copper

Lead

A. Iron

B. Zinc

C. copper

D. Lead

**Answer:**



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**10.** A substance that does not contain water of crystallization is:

- A. Blue vitriol
- B. Common salt
- C. Glauber's salt
- D. Washing soda crystals



**Answer:**



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**11.** Select from the list the gas that matches the description given in each case :

[Methane , Hydrogen, Nitrogen , Ammonia , Nitrogen dioxide , Chlorine]

A gas which burns in air or oxygen forming water



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**12.** Name of the following

A hydrocarbon which contributes towards the greenhouse effect.



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**13.** Select from the list the gas that matches the description given in each case :

[Methane , Hydrogen, Nitrogen , Ammonia , Nitrogen dioxide , Chlorine]

A greenish yellow gas that turns moist starch iodide paper blue black.



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**14.** Select from the list the gas that matches the description given in each case :

[Methane , Hydrogen, Nitrogen , Ammonia , Nitrogen dioxide , Chlorine]

A reddish brown gas liberated on heating lead nitrate crystals.



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**15.** Select from the list the gas that matches the description given in each case :

[Methane , Hydrogen, Nitrogen , Ammonia , Nitrogen dioxide , Chlorine]

A basic gas which turns red litmus solution blue.



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**16.** Match the atomic number 4,6,11,15 and 18 .

A solid non-metal of valency 3.



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**17.** Match the atomic number 4,6,11,15 and 18 .

A gas belonging to zero group.



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**18.** Match the atomic number 4,6,11,15 and 18 .

An element with 2 electrons in the valence shell.



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**19.** Match the atomic number 4,6,11,15 and 18 .

A non-metal of valency 4.



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**20.** Match the atomic number 4,6,11,15 and 18 .

A metal with one electron in the third shell.



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**21. Write a balanced chemical equation**

Action of heat on calcium bicarbonate



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**22. Write a balanced chemical equation**

Action of dilute sulphuric acid on sodium carbonate



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**23.** Write a balanced chemical equation

Action of hot water on heated magnesium



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**24.** Write balance chemical equation for the action of dilute hydrochloric acid on iron (II) sulphide.



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**25.** Write a balanced chemical equation

Action of sodium hydroxide solution on aluminium



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**26.** State one relevant observation

Flame test is performed with calcium nitrate.



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**27.** State one relevant observation

Water is added to anhydrous copper sulphate.



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**28.** State one relevant observation

Copper carbonate is decomposed on heating



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**29.** State one relevant observation

Dil.  $H_2SO_4$  is added to zinc sulphide.



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**30.** State one relevant observation

Addition of silver nitrate solution to sodium chloride solution



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### 31. Match Column A with Column B.

#### Column A

- (i) Liquid metal
- (ii) An element without neutron
- (iii) An oxidizing agent
- (iv) A liquid non metal
- (v) An inert gas

#### Column B

- A. Bromine
- B. Mercury
- C. Helium
- D. Hydrogen
- E. Oxygen



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32. Calculate the molecular mass of ammonium carbonate  $(\text{NH}_4)_2 \text{CO}_3$



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33. Calculate the percentage of nitrogen in urea  $NH_2CONH_2$ .

Given : R.M.M. of N = 14, C = 12 , O = 16, H = 1 ?



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## Section II

1. What are the causes for

Permanent hardness



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2. State one advantage of using hard water.



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3. Give an equation for the removal of permanent hardness in water.



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4. An atom of an element is represented as



Write the number of protons present in one atom of the element.



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5. An atom of an element is represented as



Write its electronic configuration.



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6. An atom of an element is represented as

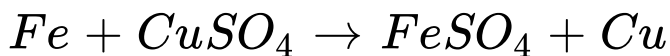


State whether it is a metal or a non metal



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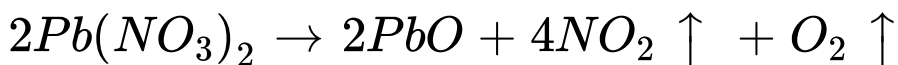
7. Classify the following reactions as Direct combination, Decomposition, Displacement, Precipitation and Neutralization.



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8. Classify the following reactions as Direct combination, Decomposition, Displacement, Precipitation and Neutralization.

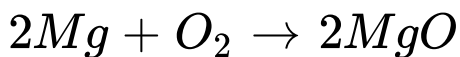


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9. Reactions can be classified as follows:

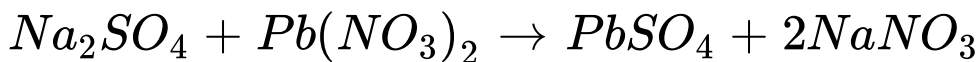
Direct combination, decomposition, simple displacement, double decomposition and

neutralisation. State which of the above types takes place in the reactions given below.



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**10.** Classify the following reactions as Direct combination, Decomposition, Displacement, Precipitation and Neutralization.



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**11. Draw the orbit structure**

Oxygen molecule



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**12. Draw the structure of ammonia molecule.**



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**13. Draw the orbit structure**

Calcium oxide





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14. Give the equation for the lab preparation of hydrogen.



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15. How is the gas collected?



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16. Write the confirmatory test for Hydrogen.



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17. Distinguish between Zinc nitrate and Copper nitrate (by heating)



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18. Distinguish between  $CO_2$  and  $SO_2$  (by using a suitable reagent)



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**19.** Give reasons for each of the following:

Noble gases do not form compounds readily.



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**20.** Give reasons for the following

Table salt absorbs moisture during the rainy season.



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## 21. Give reasons

Isotopes have the similar chemical properties.



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22. By increasing the pressure on the volume of an enclosed gas at constant (i) \_\_\_\_\_ the volume of the gas (ii) \_\_\_\_ This is given by (iii) \_\_\_\_\_ law



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**23.** A fixed volume of a gas occupies  $228\text{cm}^3$  at  $27^\circ\text{C}$  and 70 cm of mercury what is its volume at STP ?



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**24.** Difference between Hard water and Soft water



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**25.** Differentiate between the following:

(i) Efflorescence and Deliquescence



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**26.** What do you understand by exothermic reaction and endothermic reaction? Give one example of each type.



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**27.** Give an equation for the formation of ozone in the atmosphere



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**28.** What is the function of ozone in the upper atmosphere ?



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29. Name a chemical which causes ozone depletion.



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30. Complete the following table which relates to action of heat on substances :

S. No	Substance heated	Gas evolved	Residue colour
1	Zinc Carbonate	(i)	(ii)
2	Ammonium dichromate	(iii)	(iv)



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**31.** The formula of the chloride of a metal M is  $MCl$ . Write the formula of Its : Sulphate



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**32.** The formula of the chloride of a metal M is  $MCl$ . Write the formula of Its : Zincate



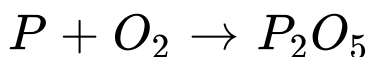
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**33.** The formula of the chloride of a metal M is MCl. Write the formula of Its : Hydroxide



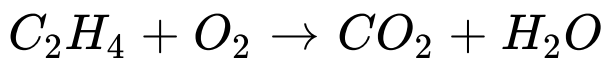
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**34.** Balance the equations :



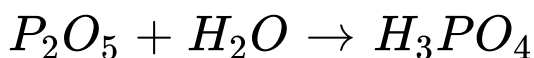
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**35.** Balance the equations :



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**36.** Balance the equations :



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**37.** A gas which turns lead acetate paper black.



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**38.** Identify the gas in the case:

A gas that causes acid rain.



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**39.** The gas which rekindles a glowing splinter.



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**40.** A gas which turns acidified potassium dichromate green.



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**41.** Write the formula for :

Sodium bisulphate : .....



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**42.** Give the formula of Ammonium nitrate





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**43.** Give the formula of Magnesium nitride



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**44.** Define : Isotopes



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**45.** Define electrovalent bond.



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**46.** Define the following: Atomic number



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**47.** Hydrated calcium sulphate has the formula of  $CaSO_4 \cdot 2H_2O$ .

What is the name given to the water molecules present in the salt ?



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**48.** Calculate the percentage of water molecules in hydrated calcium sulphate .

[Ca=40 , S=32 , O=16 , H=11]



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